

WHAT IS CLAIMED IS:

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1. A wind powered generating device comprising:

a tube cluster comprising a central outlet tube having a narrow center for channeling an upward flowing airflow, and an inlet tube having

5 a collector end located at ground level,

a connecting end,

a wall, and

a rim located at said collector end;

said wind powered generating device further comprising:

a collector assembly a top end to said mast top end, said sail being connected at a bottom end to said braced boom; and

said wind powered generating device further comprising:

an underground turbine assembly air flow interacts with to produce usable electric power.

2. The wind generating apparatus according to claim 1, further comprising:

20 a tensioner for providing wind load management to said sail, said tensioner being affixed to said braced boom and to said bottom end of said sail.

3. The wind generating apparatus according to claim 2, wherein said tensioner comprises:

a spring loaded, damped drum;

5 a wound cable affixed on one end to said bottom end of said sail, and affixed on an other end to said drum, said drum providing a constant tension on said sail.

4. The wind generating apparatus according to claim 2, wherein said tensioner comprises:

a counterbalance weight;

10 a cable affixed on one end to said bottom end of said sail, and affixed on an other end to said counterbalance weight, said counterbalance weight providing a constant tension on said sail.

15 5. The wind generating apparatus according to claim 1, wherein said sail comprises a set of individual sails, a bottom end of each said sail occupying approximately a 90° arc of said braced boom, said individual sails being located adjacent to one another.

20 6. The wind generating apparatus according to claim 1, wherein said collector assembly further comprises an emergency sail collector 30 comprising:

a collector loop 31 which is positioned at said top end of said mast, and moves down said mast in response to the detection of critical load conditions with the aid of a collector loop track 33 in said mast, being initiated by the operation of a release; and

a sock 32 which is pulled down over said mast and sail by said collector loop.

7. The wind generating apparatus according to claim 6, wherein:

5 said emergency sail collector collector loop is a weighted collector loop that moves down said mast primarily with the aid of gravity; and
said emergency sail collector further comprises a raising mechanism for raising said collector loop back to said top of said mast.

8. The wind generating apparatus according to claim 6, wherein said emergency sail collector further comprises:

10 an electric motor used to pull said collector loop down said collector loop track; and

15 a raising mechanism for raising said collector loop back to said top of said mast.

9. The wind generating apparatus according to claim 1, wherein:

20 said central outlet tube has a height that is less than half of the diameter of said turbine contained within it; and

said inlet tubes have a horizontal width that is greater than a vertical height.

10. The wind generating apparatus according to claim 1, wherein said tube cluster comprises multiple inlet tubes arranged in a staggered pattern.

11. The wind generating apparatus according to claim 1, further comprising a solar collector.

5 12. The wind generating apparatus according to claim 1, wherein said central outlet tube further comprises heat radiating surfaces.

10 13. The wind generating apparatus according to claim 1, wherein said collector assembly further comprises:

15 a steering sail oriented in a direction perpendicular to said sail that permits improved sensitivity and response time of said collector assembly without adding drag to said collector assembly.

14. The wind generating apparatus according to claim 9, wherein said inlet tubes and central output tube are constructed from low profile modular components capable of being transported by truck.

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